SYPHILIS: WAS IT ENDEMIC IN PRE-COLUMBIAN AMERICA OR WAS IT BROUGHT HERE FROM EUROPE? *

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INTRODUCTION

ON Columbus Day, October 12, 1965, Yale University made known to the world its most recent important find: the oldest existing map of the New World, one hitherto unknown and now authenticated by a number of the world's best-known experts in cartography both in the United States and abroad. The map was said to have been made in 1440, just 52 years before Columbus set out from Spain. Yale University had checked and double-checked the authenticity of its treasure before showing it to the world.

It matters little to the medical profession who reached America first. Columbus and Ericson were both excellent navigators, and they did their best. Columbus, we are told, took three surgeons with him on the first voyage. Two were left behind to care for the garrison at Hispaniola and one returned to Spain with Columbus. The one who returned with Columbus apparently had nothing to say, since no records of his medical reports have been found. The other two may have been murdered with some others of the garrison before Columbus' return voyage. And most of the Spaniards who came to the New World after Columbus, destroyed more medical information then they preserved for posterity.

What we should like to know most is what went on medically in the Americas before *any* white man got here. What really took place here in medicine 1000 years before Columbus or Ericson? For this information we must go to the natives, to the people themselves, and study the stories they told in their artwork. It is in their sculpture

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that they have recorded their medical stories.

The catalogue of my collection of pre-Columbian art lists 22 groups of medical entities. On this occasion I have chosen to discuss a single problem: "Was syphilis endemic in pre-Columbian America or was it brought here from Europe?" The choice of topic was not difficult to make. Syphilis is a rather widespread disease among all peoples, but it is a venereal disease and, until recently, open discussion of such diseases was avoided.

In 1964 and 1965, despite the effective use of penicillin and other antibiotics in treating it, syphilis has been on the increase: it has increased as much as 500 per cent in some of our cities. It is well known that the disease, unless diagnosed in its early stages and rapidly treated, may have serious systemic effects. Part of the resurgence of syphilis in present-day society has been among the younger people whose ignorance makes them vulnerable. I long ago felt it my duty to join public health officials and the American Medical Association in campaigning to bring the etiology, recognition, and treatment of syphilis to the forefront. Any frank discussion of the disease, even if limited to a discussion of its origin, serves to focus a spotlight on a disease that thrives in darkness.

And so, on this occasion, our subject is syphilis. I shall limit myself to the history of its origin.

Historical Review

It must be remembered that the cause of syphilis, the spirochete *Treponema pallidum*, was discovered by Fritz Schaudinn and Erich Hoffman only in 1905. Prior to that date many theories had existed as to the causative agent. It must be remembered also that modern antibiotic treatment of syphilis dates back only to 1943. The upsurge of syphilis accompanying World War II, it will be recalled, was marvelously controlled by the use of penicillin and other antibiotics. But we must realize that the wonder-drug antibiotics have lulled us into a false sense of security; for while the general public has been assured that syphilis is no longer a menace—owing to the antibiotics—the disease has raised its ugly head again, and we are seeing syphilis today in almost epidemic proportions.

How did syphilis come into being? Where did it start? Whom are we to believe? There are many theories as to the origin of syphilis.

However, there are two that have the widest support in history.

First there is the theory that syphilis did not exist in Europe until Columbus' crew brought it back with them from the New World. This theory has many supporters: chief among them the early Spanish writers of the beginning of the 16th century. In recent times this theory has been strongly supported by Iwan Bloch,[1] among others.

Then there is the opposing theory: that syphilis did not exist in pre-Columbian America but was transmitted to the natives by the invading Spanish conquerors. This theory also has strong support in the literature. Which viewpoint is correct? Over the years a heated argument has persisted.

This is not the time nor the place to set before you the extensive literature supporting both sides of the question. It would be impossible. I am therefore appending to this paper a bibliography that will assist anyone wishing to appraise the two theories.

The New World Theory

The supporters of the New World origin of syphilis contend that almost all the people of the Antilles, where Columbus finally landed (Hispaniola—the island now divided into Haiti and the Dominican Republic) suffered from sores called *las bubas*, and that Columbus' crew contracted the disease there and brought it back to Spain and Portugal in 1493. From there the disease spread to France. At about that time, King Charles VIII of France laid claim on hereditary grounds to the kingdom of Naples. The Neapolitans rejected his claim, and Charles attacked them. Finally, Naples fell to the French. In 1496 the Italians rose up and evicted the French and their mercenary troops from different countries of Europe. During the years of hostility (again according to the theory), syphilis was passed from one army to the other by camp followers of the time who showed no preference for either side. With the retreat of the French, the French soldiers and their allies from all over Europe spread the disease widely. The various roads of retreat were marked by the spread of the "new disease." The supporters of this theory claim that syphilis appeared in France, Germany, Holland, Switzerland, and Greece in 1496, in Scotland in 1497, in Hungary and Russia in 1499. Vasco da Gama's expedition is said to have carried it to India in 1498.

Concurrently the Jews and the Moslems, who were driven out of

Spain by the Spanish Inquisition at about that time, carried the disease to North Africa. According to the supporters of the theory, no disease in history had spread so widely and so efficiently in so short a time. The spread is reflected in the early names for the disease: the *bubas* or "disease of the Antilles," the "French disease," the "Italian disease," the "Polish disease," and the "Portuguese diesase." France, however, took most of the blame for it.

It was not until 1530 that Girolamo Fracastoro, a physician of Verona, Italy, published a poem entitled *Syphilis, sive Morbus Gallicus,* in which Syphilus, the main character, was the first man to have the disease. Syphilus, a swineherd in Fracastoro's story, thus relieved France of responsibility for the affliction. But even today syphilis is termed the "French disease" by some.

The Alternative Theory

Those who give no credence to the theory described above point out discrepancies in the reports of the early Spanish writers. Richmond C. Holcomb[2] and others have been severe in their criticisms of the Spanish reports. Holcomb in his book, *Who Gave the World Syphilis? The Haitian Myth,* points out that an epidemic of the disease had broken out in Naples long before the French had arrived—even before Columbus had returned home from his first voyage. Holcomb and others call attention to the fact that Columbus and his brother, who was Columbus' biographer, made no mention of any disease contracted from the inhabitants of Hispaniola. They claim that Spanish and Portuguese sailors had contracted this disease 10 years before Columbus set out for America from cohabitation with native women along the west African coast. They also point out that marrano Jews—Christianized Jews of medieval Spain, especially those accepting Christianity to escape persecution—*were* afflicted with a disease and, as undernourished refugees, died like flies, but that the illness was not syphilis but rather typhus. In addition to doubting the early Spanish writers, supporters of the Old World theory, they quote from the Bible, Greek reports, Roman documents, and other sources indicating that the disease was not a new disease at all, but rather that it was ancient. They insist that Columbus' sailors, Cortez' sailors, and others that followed carried the disease to the New World.

Which group are we to believe? Did pre-Columbian America have

syphilis and did Columbus' sailors acquire it there or did the Spaniards bring it into the New World? From the conflicting accounts in the literature it is not at all certain who is right. Apparently the answer to the question must be sought outside the extensive available literature.

Will the answer be found in the bony skeletons studied by archaeologists and anthropologists? Let us examine this aspect of the subject.

Osteology, Pathology, and Paleopathology

Surely, one might think, all that is needed is the excavation of a few graves containing bodies buried before Columbus arrived in America. If syphilis was as rampant as it was said to be by Oviedo y Valdez[3] (one of the early Spanish chroniclers), there might be ample evidence of the disease in skulls and long bones. But it is not easy to recognize syphilis even in fresh bones, and it is accordingly even more difficult to recognize it in bones that have long been dry. Then, too, the shortness of life in prehistoric and early historic periods might prevent the appearance of late skeletal lesions.

Eastern hemispheric paleopathology has not been adequately studied, but thousands of graves have been examined in Peru and Mexico. Arthritis and osteoarthritis have been found, more prevalent in some populations than in others. There is abundant material that is thought to bear upon the question of the antiquity of syphilis, but no unequivocal evidence of syphilitic bone destruction has been forthcoming, and the material is very difficult to evaluate. Periostitis is found rather often but it could have been caused by other types of infection or by trauma and need not be attributed to syphilis. If one were to visit an orthopedic hospital today and intimate that every patient in it suffering from periostitis was syphilitic, the reaction of the patients would be striking. If the pre-Columbian native of the New World did have syphilis he may have had it in a very mild form—one that never reached the tertiary stage—or perhaps the ancient medicine men of Peru and Mexico knew more about the use of present-day antibiotics than Alexander Fleming and Selman A. Waksman ever realized.

Ales Hrdlicka,[4] the great anthropologist of the Smithsonian Institution, summed up the story about 60 years ago when he wrote: "If syphilis existed before the Spaniards reached this country, signs of it should be at least occasionally discovered in the ancient burials.

But the bones from the old burials are, as a rule, free from any sign of the disease. . . ." And as if to reply in anticipation to those who might feel that only a few areas had been excavated and that therefore he might be wrong Hrdlicka added: "It is difficult to see, if the disease existed before the whites came, how, with the well-known wide intercourse among the Indians, whole great regions could escape it." To be sure, it has been suggested that isolation of population groups could cause regional variations in the prevalence of syphilis or of any other disease.

Those who adhere to the theory that syphilis originated in the Americas often refer to a report made by Dr. Hubert U. Williams[5] entitled, "The Origin and Antiquity of Syphilis: The Evidence from Diseased Bones." I studied Dr. Williams' paper very carefully. It is a magnificent report on bone pathology, but Williams has not proved to my satisfaction that the bones in question were buried *prior to* Columbus. Williams found bones with undeniable evidence of syphilis but the lesions in question may have been caused by *imported Treponema* organisms.

Let us look, for a moment, at the findings of the pathologists and human paleopathologists in Europe and, better still, in the whole Eastern Hemisphere. If syphilis cannot be found in pre-Columbian America perhaps it can be found in the bones of early European, Asian, or African cultures. No evidence of syphilis has ever been found in any of the numerous Babylonian excavations. In more than 20,000 bodies studied in ancient Egyptian tombs it has not been possible to demonstrate any syphilis. In Europe the great Rudolf Virchow,[6] probably the greatest pathologist of all time, studied arthritis deformans —or cave gout, as he named the disease—in a great number of prehistoric human and animal bones. He repeatedly analyzed much material from cave bears. According to Erwin H. Ackerknecht: "The fact that some of his cave-bear material looked exactly like syphilitic periostitis inspired him with salutary caution against diagnosing syphilis in prehistoric bones. In surveying the situation, he did not feel that any unequivocal pre-Columbian syphilitic bone material, European or American, existed."[7]

Since a definitive diagnosis of syphilis has not been made unequivocally in either pre-Columbian bones in the Americas or in the prehistoric bones of Europe and Asia and North Africa, we have no

Fig. 1. Drinking vessel with representation of figure showing part of upper lip eaten away and nose partially eaten away. In addition the face is covered with skin lesions. Possible diagnoses: either South American leishmaniasis or, possibly, leprosy. Mochica culture, Peru, ca. A.D. 800.

answer from them for the question under discussion. Thus the hoped-for solution for our question through the use of human paleopathology has not led to universally accepted conclusions.

There lies, however, one further avenue of investigation open to us: the study of pre-Columbian medical sculpture. Here you find stories in clay relating to medical problems of all varieties, told by unbiased artist-historians of their day. Let us see what they had to say.

American Archeology and pre-Columbian Medical Sculpture

The ancient pre-Columbian sculptors of the Western Hemisphere depicted pathology and disease with startling—sometimes shocking—realism. In some of the tribes, perhaps those in whom religious inhibitions were few, artists seem to have been free to put anything into clay that they desired. I have felt for many years that the ancient American sculptor had worked closely with the ancient American doctor. The results of this collaboration are the hundreds of stories in clay graphically illustrating all kinds of medical problems and diseases. These artist-historians seem to have been free to interpret any current problem that chanced to come to their attention. I, for one, feel that many of these figures were actually utilized as medical teaching models, perhaps for the young medical students and midwife nurses of their day? Perhaps these artist-historians, lacking a written language, had intentions of telling us of their daily medical problems. In any event, they had many stories to tell, and they told them in clay. Let us evaluate what they were trying to tell us about some of their dermatological diseases.

Occasionally an archaeologist excavating in Mexico has found a figure covered entirely with representations of skin lesions. The first thought that has come to his mind has been: Is this evidence of syphilis in pre-Columbian America? Archaeologists as a group are cautious and careful scientists. They may have thought of syphilis in pre-Columbian America, but they have not made a medical diagnosis. And rightfully so. They are not physicians; they are archaeologists.

But there are other people not as cautious as trained archaeologists who, in spite of the fact that they have had no specialized medical training, freely make diagnoses of all sorts. Diego Rivera, the famous Mexican artist, had one or two specimens of these clay figures in his vast general collection. He thought that the lesions represented on

Fig. 2. Male ceramic figure with entire body covered with skin lesions resembling yaws or pinta. Aside from the skin lesions the figure is not represented as seriously ill. Colima culture, western Mexico, ca. A.D. 200-600.

them resembled syphilitic lesions. Some anthropologists, respecting Rivera's opinion, accepted this belief. Miguel Covarrubias, another great Mexican artist, wrote a number of fine books on pre-Columbian art. In one of his books he tells of a specimen covered with representations of sores which, he states, are syphilitic. In fact every figure in my own collection bearing representations of dermatological lesions has been diagnosed at one time or another as indicative of the existence of syphilis in the Americas prior to Columbus!

As many of you know, I am an obstetrician. I am not an archaeologist or an anthropologist. As a physician whose specialty is limited to bringing babies into the world in the great city of New York, I am not at all qualified to make an exact dermatological diagnosis, particularly of diseases in persons who have just come into the country from the tropics or from subtropical areas of the world. Any such diagnosis would necessarily be made *for me* by trained public health officials primarily interested in tropical diseases, or by a skin specialist who has had wide experience with types of lesions produced by such diseases.

Such experts have responded to my calls for help. Despite the fact that I am an old-time public health official myself, being a former member of the U. S. Public Health Service, and despite the fact that I served as a reservation doctor for the old U. S. Indian Service with the Department of the Interior of our government and saw my share of syphilis in both of these capacities, I nevertheless have called for consultations on specimens in my collection with health officials who know syphilis and skin diseases of the tropics better than I. In addition, I have inveigled a visiting dermatological expert from time to time to look at my specimens and give his opinion.

Not satisfied with all this, I invited three fully qualified skin specialists to my private museum during the preparation of this paper. Each was shown specimens separately. Each was given a slip of paper and the background story of the area where the figure was found; each was told of the antiquity of the specimen; and each was afforded an opportunity to study carefully the specimen in his own hands. There was no collaboration in this group quiz. After each figure had been studied I asked for a description of the lesions represented and a possible diagnosis or two.

Five of the figures that the experts examined are shown in the

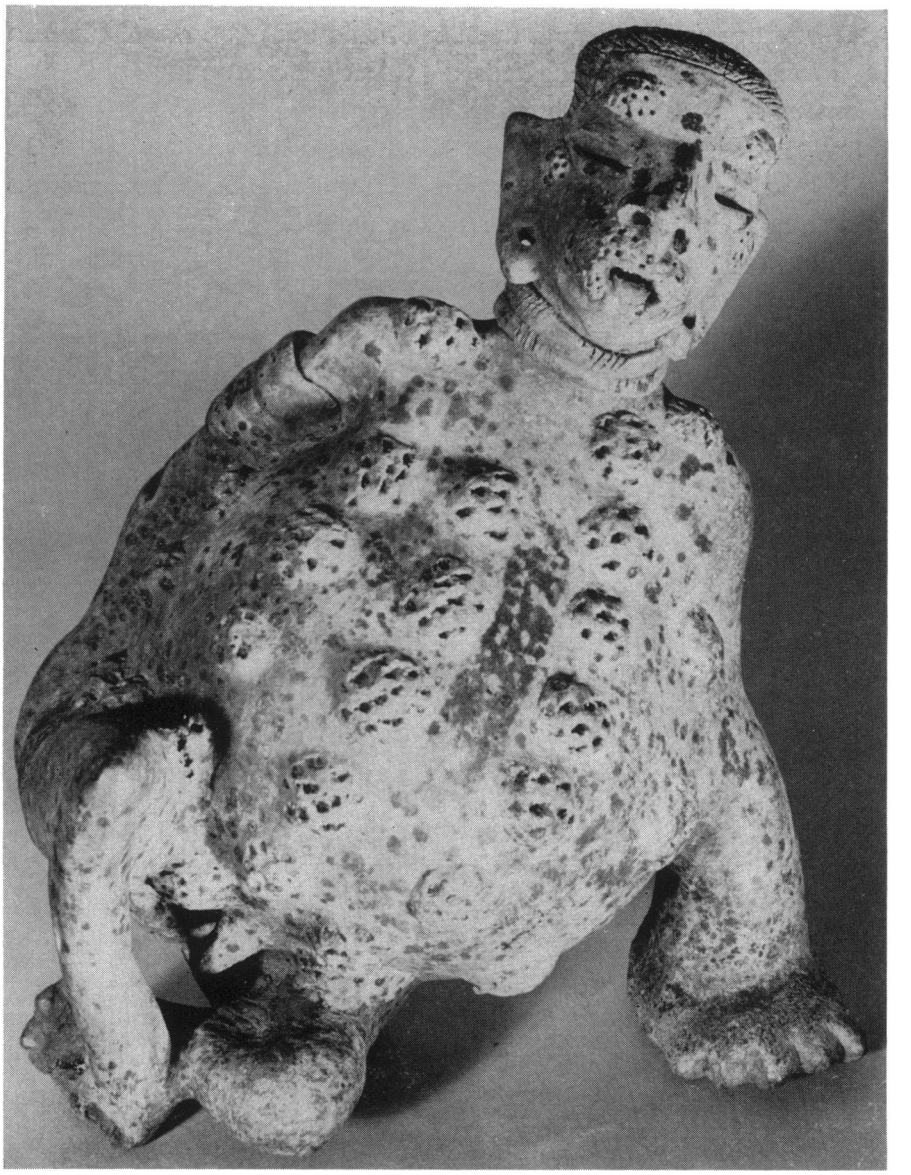

Fig. 3. Male ceramic figure represented as seriously ill with multiple large skin lesions covering entire body. In addition, there is ascites and edema of the left upper extremity with emaciation of the legs. Possible diagnosis: metastatic carcinomatosis. Colima culture, western Mexico, ca. A.D. 200-600.

accompanying illustrations.* Incidentally, each of these specimens had been diagnosed by some amateurs at one time or another as "syphilitic"; actually none of the specimens showed any evidence of syphilis. The consensus of the three skin specialists on these figures was as follows: Figure 1, either South American leishmaniasis or, possibly, leprosy; Figure 2, yaws or pinta; Figure 3, possible metastatic carcinomatosis; Figure 4, a plaquelike form of yaws; Figure 5, either a postorbital neoplasm with invasive metastasis locally or a serious phlegmonous infection with localized carbunculosis.†

It is my belief, now that all available experts have examined the figures and have given their diagnoses, that syphilis did not exist in the pre-Columbian New World. If syphilis as we now have come to know the syndrome, had existed—it would have been sculptured. The fact that no representations of typical secondary lesions were put into clay offers mute evidence that the pre-Columbian American natives did not know European syphilis. And if more evidence is needed, I should like to mention the fact that every specimen that I have examined showing the penis and the vagina (and I have seen many) no primary lesion suggestive of a chancre has ever been seen in pre-Columbian sculpture. In all my wanderings up and down these two Western hemispheric continents, in visiting every museum known to contain medical pre-Columbian figures, in examining many important private collections of pre-Columbian sculpture both here and abroad, I have never seen a primary chancre portrayed on any pre-Columbian figure. And since these free and uninhibited pre-Columbian artist-historians have *not* put into clay evidence of the primary chancre of syphilis—which is so typical a lesion in itself—I inevitably conclude that syphilis, as it has evolved in modern times, did not exist in the pre-Columbian New World.

In closing I should like to call to your attention an explanation offered by Dr. Ellis Herndon Hudson,[8] supported by Drs. R. C. L. Batchelor and Marjorie Murrell[9] of Edinburgh, Scotland, that may go a long way toward satisfying your curiosity about the true origin of syphilis. If the disease did not come from the New World, where did

*The figures shown in these illustrations are from the Weisman Collection of pre-Columbian Sculpture. Photographs by Bernard Cole.

†The audience before whom this paper was presented at The New York Academy of Medicine included many dermatologists and public health officials. In order to obtain as many informed opinions as possible a quiz form was given to each member of the audience prior to delivery of the address requesting diagnoses on a number of specimens demonstrating representations of skin-disease lesions. Results of this quiz, unavailable at the time this paper was prepared, will be published later.

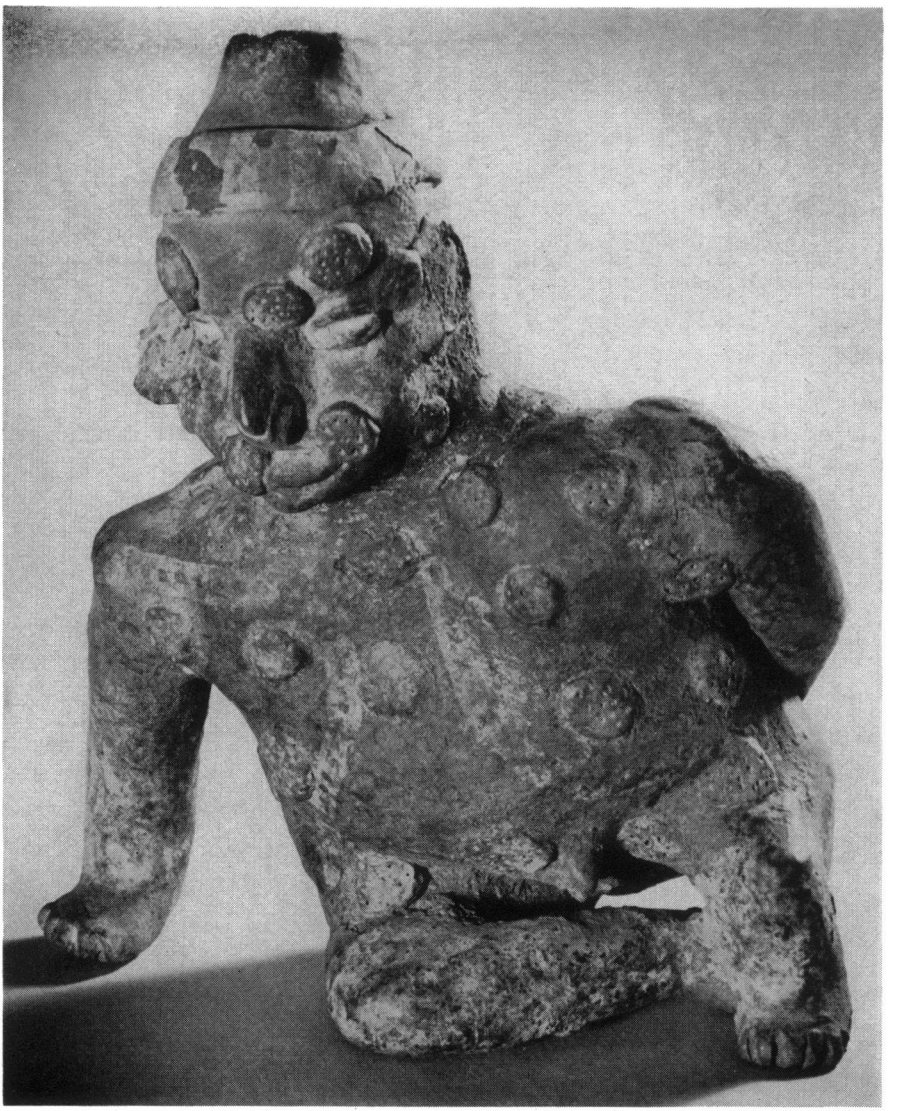

Fig. 4. Male clay figure manifesting plaquelike skin lesions over entire body including mucocutaneous junctions. The individual represented by the statue does not appear to be critically ill. Diagnosis: a plaquelike form of yaws commonly seen today in the Antilles. Nayarit culture, western Mexico, ca. A.D. 400-800.

it originate? Let me give you—briefly and with a twinkle in my eye—Hudson's most plausible explanation of the entire subject.

In his exhaustive treatise on treponematosis, Hudson categorically claims that modern Western syphilis, the yaws of the Caribbean area and Africa, pinta in Mexico and South America, the gangosa of Uganda, Africa, the bejel of Iraq, and the dichuchwa of Bechuanaland are all one and the same disease. Hudson feels that there is only one *Treponema pallidum,* and that all the various clinical entities that appear differently in widely separated parts of the world are one and the same illness: i.e., treponematosis in one form or another. Hudson's plea for this world view of treponematosis, seconded by Batchelor and Murrell, has been strengthened by two findings: 1) the causal parasite of all the diseases just mentioned is equally vulnerable to penicillin; 2) persons with specific blood antibodies of all the treponemal diseases immobilize *Treponema pallidum.*

Here are some direct quotations from Hudson's masterful contribution to the medical literature on the subject:

> Treponematosis is a universally distributed disease caused by *Treponema,* a genus with one species, *pallidum.* This disease presents different clinical patterns under different climatic and sociological conditions. Any variations in the parasite itself are functional in nature and represent strains, which may or may not have fixed biological characters. Treponematosis is an ancient disease of man, which probably spread from an origin in Africa. Black slavery brought the infection to Europe continuously over thousands of years, and took a large part of it to the New World . . .
>
> Endemic treponematosis in Europe was compounded of infections: 1) those brought by slaves from North Africa; 2) those brought back from the Near East by the Crusaders; 3) those introduced by the new Portuguese slave trade with West Africa before Columbus . . .
>
> The theory of an "epidemic" of syphilis in Europe about 1500 is not well supported . . .
>
> The theory of an American origin of syphilis is objectionable on two grounds: 1) it assumes that syphilis is a different disease from the rest of the treponematosis in the world, and 2) it assumes not only that Columbus brought back a highly infectious venereal disease from America, but that the venereal feature was as

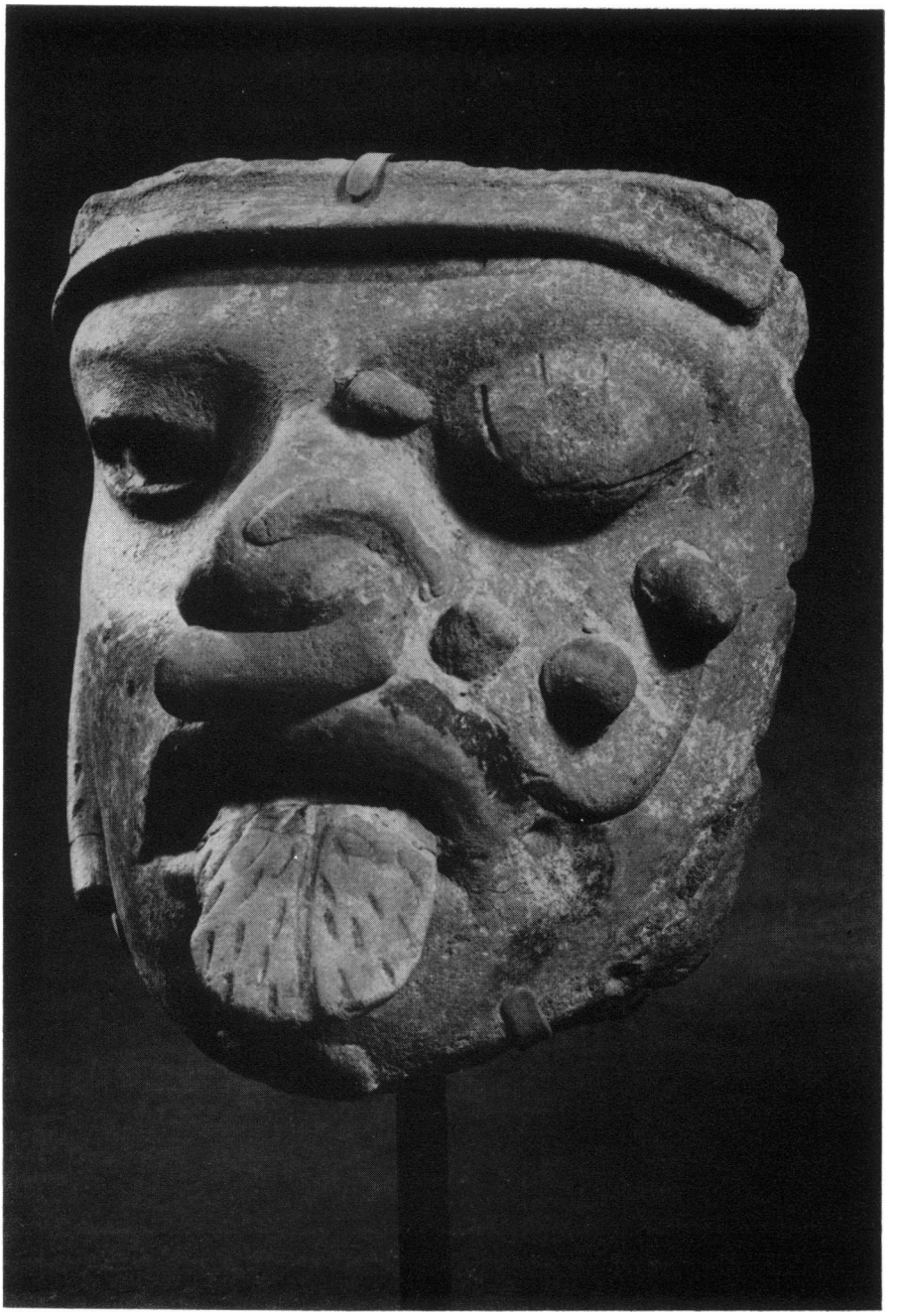

Fig. 5. A clay mask with unilateral facial lesions. The left eye is closed and there is bulging behind the eyeball. There are multiple excrescences on the left half of the face around the eyeball. The tongue is exposed and resembles a "geographic tongue." Possible diagnoses: possible postorbital neoplasm with invasive metastasis locally, or perhaps a serious phlegmonous infection with localized carbunculosis. Totonac culture, eastern Mexico, ca. A.D. 800-1000.

"new" as the disease itself. The venereal character of this form of treponematosis, however, was not due to its sudden importation into Europe by a shipload of explorers, but rather to the gradual development in Europe of a fabric of human life so hygienic that primitive and transitional forms of the infection were screened out and the opportunities for sexual transmission proportionately increased . . .

It required several centuries for this adult venereal disease to emerge into its present form. At certain times and at certain places in Europe, conditions of human life have deteriorated subsequently to such an extent that transitional and primitive forms of the infection have re-appeared under the name of "syphiloids" . . .

In the past, attempts have been made to differentiate between the most primitive forms of treponematosis, known generally as yaws, and the sophisticated form known as syphilis, but differences between the two forms have proven, upon examination, to be quantitative in nature and due largely to environmental influences. This view is opposed to the view generally held . . .

Thus you see that both sides of the argument are "right" and both are "wrong." Treponematosis was and is both in Europe and the New World. Columbus and Leif Ericson and the other early travelers had little to do with the organism itself. *Treponema pallidum* has been with man ever since he evolved from a single-celled amoebalike organism.

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